

Serial Number: 10/009,624A

CRF Processing Date: 5/21/2002
 Edited by: [Signature]
 Verified by: [Signature] (STIC staff)

ENTERED

5800

- ☐ Changed a file from non-ASCII to ASCII
- ☒ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☒ Deleted: ☒ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted **ending** stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☐ Other: _____

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.



PCT09

RAW SEQUENCE LISTING

DATE: 05/21/2002

PATENT APPLICATION: US/10/009,624A

TIME: 18:38:42

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\05212002\J009624A.raw

```

3 <110> APPLICANT: Brett P. Monia
4       Lex M. Cowser
5       ISIS PHARMACEUTICALS, INC.
7 <120> TITLE OF INVENTION: ANTISENSE MODULATION OF Jun N-TERMINAL KINASE KINASE-2
EXPRESSION
9 <130> FILE REFERENCE: RTSP-0060
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/009,624A
C--> 11 <141> CURRENT FILING DATE: 2002-04-09
11 <150> PRIOR APPLICATION NUMBER: 09/344,001
12 <151> PRIOR FILING DATE: 1999-06-24
14 <160> NUMBER OF SEQ ID NOS: 47
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 1461
18 <212> TYPE: DNA
19 <213> ORGANISM: Homo sapiens
21 <220> FEATURE:
22 <221> NAME/KEY: CDS
23 <222> LOCATION: (68)..(1327)
25 <400> SEQUENCE: 1
26 aggcggtgtt tgtctgccgg actgacgggc ggccggggcgg tgcgcggcgg cgggtggcggc 60
28 ggggaaa atg gcg gcg tcc tcc ctg gaa cag aag ctg tcc cgc ctg gaa 109
29       Met Ala Ala Ser Ser Leu Glu Gln Lys Leu Ser Arg Leu Glu
30       1 5 10
32 gca aag ctg aag cag gag aac cgg gag gcc cgg cgg agg atc gac ctc 157
33 Ala Lys Leu Lys Gln Glu Asn Arg Glu Ala Arg Arg Arg Ile Asp Leu
34 15 20 25 30
36 aac ctg gat atc agc ccc cag cgg ccc agg ccc acc ctg cag ctc ccg 205
37 Asn Leu Asp Ile Ser Pro Gln Arg Pro Arg Pro Thr Leu Gln Leu Pro
38 35 40 45
40 ctg gcc aac gat ggg ggc agc cgc tgc cca tcc tca gag agc tcc ccg 253
41 Leu Ala Asn Asp Gly Gly Ser Arg Ser Pro Ser Ser Glu Ser Ser Pro
42 50 55 60
44 cag cac ccc acg ccc ccc gcc cgg ccc cgc cac atg ctg ggg ctc ccg 301
45 Gln His Pro Thr Pro Pro Ala Arg Pro Arg His Met Leu Gly Leu Pro
46 65 70 75
48 tca acc ctg ttc aca ccc cgc agc atg gag agc att gag att gac cag 349
49 Ser Thr Leu Phe Thr Pro Arg Ser Met Glu Ser Ile Glu Ile Asp Gln
50 80 85 90
52 aag ctg cag gag atc atg aag cag acg ggc tac ctg acc atc ggg ggc 397
53 Lys Leu Gln Glu Ile Met Lys Gln Thr Gly Tyr Leu Thr Ile Gly Gly
54 95 100 105 110
56 cag cgc tac cag gca gaa atc aac gac ctg gag aac ttg ggc gag atg 445
57 Gln Arg Tyr Gln Ala Glu Ile Asn Asp Leu Glu Asn Leu Gly Glu Met
58 115 120 125

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60 ggc agc ggc acc tgc ggc cag gtg tgg aag atg cgc ttc cgg aag acc      493
61 Gly Ser Gly Thr Cys Gly Gln Val Trp Lys Met Arg Phe Arg Lys Thr
62          130          135          140
65 ggc cac gtc att gcc gtt aag caa atg cgg cgc tcc ggg aac aag gag      541
66 Gly His Val Ile Ala Val Lys Gln Met Arg Arg Ser Gly Asn Lys Glu
67          145          150          155
69 gag aac aag cgc atc ctc atg gac ctg gat gtg gtg ctg aag agc cac      589
70 Glu Asn Lys Arg Ile Leu Met Asp Leu Asp Val Val Leu Lys Ser His
71          160          165          170
73 gac tgc ccc tac atc gtg cag tgc ttt ggg acg ttc atc acc aac acg      637
74 Asp Cys Pro Tyr Ile Val Gln Cys Phe Gly Thr Phe Ile Thr Asn Thr
75 175          180          185          190
77 gac gtc ttc atc gcc atg gag ctc atg ggc acc tgc gct gag aag ctc      685
78 Asp Val Phe Ile Ala Met Glu Leu Met Gly Thr Cys Ala Glu Lys Leu
79          195          200          205
81 aag aag cgg atg cag ggc ccc atc ccc gag cgc att ctg ggc aag atg      733
82 Lys Lys Arg Met Gln Gly Pro Ile Pro Glu Arg Ile Leu Gly Lys Met
83          210          215          220
86 aca gtg gcg att gtg aag gcg ctg tac tac ctg aag gag aag cac ggt      781
87 Thr Val Ala Ile Val Lys Ala Leu Tyr Tyr Leu Lys Glu Lys His Gly
88          225          230          235
90 gtc atc cac cgc gac gtc aag ccc tcc aac atc ctg ctg gac gag cgg      829
91 Val Ile His Arg Asp Val Lys Pro Ser Asn Ile Leu Leu Asp Glu Arg
92          240          245          250
94 ggc cag atc aag ttc tgc gac ttc ggc atc agc ggc cgc ctg gtg gac      877
95 Gly Gln Ile Lys Phe Cys Asp Phe Gly Ile Ser Gly Arg Leu Val Asp
96 255          260          265          270
98 tcc aaa gcc aag acg cgg agc gcc ggc tgt gcc gcc tac atg gca ccc      925
99 Ser Lys Ala Lys Thr Arg Ser Ala Gly Cys Ala Ala Tyr Met Ala Pro
100          275          280          285
102 gag cgc att gac ccc cca gac ccc acc aag ccg gac tat gac atc cgg      973
103 Glu Arg Ile Asp Pro Pro Asp Pro Thr Lys Pro Asp Tyr Asp Ile Arg
104          290          295          300
106 gcc gac gta tgg agc ctg ggc atc tcg ctg gtg gag ctg gca aca gga      1021
107 Ala Asp Val Trp Ser Leu Gly Ile Ser Leu Val Glu Leu Ala Thr Gly
108          305          310          315
110 cag ttt ccc tac aag aac tgc aag acg gac ttt gag gtc ctc acc aaa      1069
111 Gln Phe Pro Tyr Lys Asn Cys Lys Thr Asp Phe Glu Val Leu Thr Lys
112          320          325          330
114 gtc cta cag gaa gag ccc ccg ctt ctg ccc gga cac atg ggc ttc tcg      1117
115 Val Leu Gln Glu Glu Pro Pro Leu Leu Pro Gly His Met Gly Phe Ser
116 335          340          345          350
118 ggg gac ttc cag tcc ttc gtc aaa gac tgc ctt act aaa gat cac agg      1165
119 Gly Asp Phe Gln Ser Phe Val Lys Asp Cys Leu Thr Lys Asp His Arg
120          355          360          365
122 aag aga cca aag tat aat aag cta ctt gaa cac agc ttc atc aag cgc      1213
123 Lys Arg Pro Lys Tyr Asn Lys Leu Leu Glu His Ser Phe Ile Lys Arg
124          370          375          380
126 tac gag acg ctg gag gtg gac gtg gcg tcc tgg ttc aag gat gtc atg      1261

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127 Tyr Glu Thr Leu Glu Val Asp Val Ala Ser Trp Phe Lys Asp Val Met
128           385                      390                      395
130 gcg aag act gag tca ccg cgg act agc ggc gtc ctg agc cag ccc cac      1309
131 Ala Lys Thr Glu Ser Pro Arg Thr Ser Gly Val Leu Ser Gln Pro His
132       400                      405                      410
134 ctg ccc ttc ttc agg tag ctgcttggcg ggggccagcc ccacaggggg ccagggggcat 1367
135 Leu Pro Phe Phe Arg
136 415
138 ggccacaggc cccctcccc acttgccac ccagctgcct gccaggggag acctgggacc 1427
140 tggacggcca cctaggactg aggacagaga gtgg                      1461
143 <210> SEQ ID NO: 2
144 <211> LENGTH: 19
146 <212> TYPE: DNA
147 <213> ORGANISM: Artificial Sequence
149 <220> FEATURE:
150 <223> OTHER INFORMATION: PCR Primer
152 <400> SEQUENCE: 2
153 tcccgtcaac cctgttcac                      19
155 <210> SEQ ID NO: 3
156 <211> LENGTH: 23
157 <212> TYPE: DNA
158 <213> ORGANISM: Artificial Sequence
160 <220> FEATURE:
161 <223> OTHER INFORMATION: PCR Primer
163 <400> SEQUENCE: 3
164 ctcatgatc tcctgcagct tct                      23
166 <210> SEQ ID NO: 4
167 <211> LENGTH: 27
168 <212> TYPE: DNA
169 <213> ORGANISM: Artificial Sequence
171 <220> FEATURE:
172 <223> OTHER INFORMATION: PCR Probe
174 <400> SEQUENCE: 4
175 cgcagcatgg agagcattga gattgac                      27
177 <210> SEQ ID NO: 5
178 <211> LENGTH: 19
179 <212> TYPE: DNA
180 <213> ORGANISM: Artificial Sequence
182 <220> FEATURE:
183 <223> OTHER INFORMATION: PCR Primer
185 <400> SEQUENCE: 5
186 gaaggtgaag gtcggagtc                      19
188 <210> SEQ ID NO: 6
189 <211> LENGTH: 20
190 <212> TYPE: DNA
191 <213> ORGANISM: Artificial Sequence
193 <220> FEATURE:
194 <223> OTHER INFORMATION: PCR Primer
196 <400> SEQUENCE: 6

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RAW SEQUENCE LISTING

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197 gaagatggtg atgggatttc                                20
199 <210> SEQ ID NO: 7
200 <211> LENGTH: 20
201 <212> TYPE: DNA
202 <213> ORGANISM: Artificial Sequence
204 <220> FEATURE:
205 <223> OTHER INFORMATION: PCR Probe
207 <400> SEQUENCE: 7
208 caagcttccc gttctcagcc                                20
210 <210> SEQ ID NO: 8
211 <211> LENGTH: 20
212 <212> TYPE: DNA
213 <213> ORGANISM: Artificial Sequence
215 <220> FEATURE:
216 <223> OTHER INFORMATION: Antisense Oligonucleotide
218 <400> SEQUENCE: 8
219 agacaaacac ctcgtgccga                                20
221 <210> SEQ ID NO: 9
222 <211> LENGTH: 20
223 <212> TYPE: DNA
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Antisense Oligonucleotide
229 <400> SEQUENCE: 9
230 cgtcagtcgc gcagacaaac                                20
232 <210> SEQ ID NO: 10
233 <211> LENGTH: 20
234 <212> TYPE: DNA
235 <213> ORGANISM: Artificial Sequence
237 <220> FEATURE:
238 <223> OTHER INFORMATION: Antisense Oligonucleotide
240 <400> SEQUENCE: 10
241 cgcgcaccgc ccggccgccc                                20
243 <210> SEQ ID NO: 11
244 <211> LENGTH: 20
245 <212> TYPE: DNA
246 <213> ORGANISM: Artificial Sequence
248 <220> FEATURE:
249 <223> OTHER INFORMATION: Antisense Oligonucleotide
251 <400> SEQUENCE: 11
252 tcttccccgc cgccaccgcc                                20
254 <210> SEQ ID NO: 12
255 <211> LENGTH: 20
256 <212> TYPE: DNA
257 <213> ORGANISM: Artificial Sequence
259 <220> FEATURE:
260 <223> OTHER INFORMATION: Antisense Oligonucleotide
262 <400> SEQUENCE: 12
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Input Set : A:\PTO.AMC.txt

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265 <210> SEQ ID NO: 13
266 <211> LENGTH: 20
267 <212> TYPE: DNA
268 <213> ORGANISM: Artificial Sequence
270 <220> FEATURE:
271 <223> OTHER INFORMATION: Antisense Oligonucleotide
274 <400> SEQUENCE: 13
275 gccatcttcc ccgcccac          20
277 <210> SEQ ID NO: 14
278 <211> LENGTH: 20
279 <212> TYPE: DNA
280 <213> ORGANISM: Artificial Sequence
282 <220> FEATURE:
283 <223> OTHER INFORMATION: Antisense Oligonucleotide
285 <400> SEQUENCE: 14
286 ccgccatctt ccccgccgc          20
288 <210> SEQ ID NO: 15
289 <211> LENGTH: 20
290 <212> TYPE: DNA
291 <213> ORGANISM: Artificial Sequence
293 <220> FEATURE:
294 <223> OTHER INFORMATION: Antisense Oligonucleotide
296 <400> SEQUENCE: 15
297 cgccgccatc ttcccgcgc          20
299 <210> SEQ ID NO: 16
300 <211> LENGTH: 20
301 <212> TYPE: DNA
302 <213> ORGANISM: Artificial Sequence
304 <220> FEATURE:
305 <223> OTHER INFORMATION: Antisense Oligonucleotide
307 <400> SEQUENCE: 16
308 gacgcgccca tcttcccgc          20
310 <210> SEQ ID NO: 17
311 <211> LENGTH: 20
312 <212> TYPE: DNA
313 <213> ORGANISM: Artificial Sequence
315 <220> FEATURE:
316 <223> OTHER INFORMATION: Antisense Oligonucleotide
318 <400> SEQUENCE: 17
319 aggacgccgc catcttccc          20
321 <210> SEQ ID NO: 18
322 <211> LENGTH: 20
323 <212> TYPE: DNA
324 <213> ORGANISM: Artificial Sequence
326 <220> FEATURE:
327 <223> OTHER INFORMATION: Antisense Oligonucleotide
329 <400> SEQUENCE: 18
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332 <210> SEQ ID NO: 19

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/009,624A

DATE: 05/21/2002

TIME: 18:38:43

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\05212002\J009624A.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date